



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,987	03/02/2004	Csaba Truckai	DFINE.034CP1	1287
20995	7590	12/13/2006	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			YOON, TAE H	
2040 MAIN STREET			ART UNIT	
FOURTEENTH FLOOR			PAPER NUMBER	
IRVINE, CA 92614			1714	

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/790,987

**Applicant(s)**

TRUCKAI, CSABA

**Examiner**

Tae H. Yoon

**Art Unit**

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 29-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9-13, 20, 21 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 14-19, 22, 23 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1714

Note new examiner and applicant's election of claims 1-28 without traverse is acknowledged. Cancellation of non-elected claim in order to expedite prosecution is suggested.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The abbreviated PET in claim 20 is indefinite absent a full chemical name and said PET (specie) is also one of the recited thermoplastic polyester (genus). Also, the recited "such as" is indefinite and additional claim with a narrow limitation is suggested.

The recited "wherein the crosslinking ---" in claim 28 lacks an antecedent basis in claim 21, and thus it is indefinite.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 1714

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Note that the instantly recited preamble, "biocompatible", has little probative value absent further limitation.

Claims 1-4, 7, 10-12 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Plummer et al (US 6,284,809).

Plummer et al teach a composite material of a polymer and glass microspheres in abstract and example 1. Said composite has a thermal conductivity of less than 0.120 watt/m · K, and would inherently possess the instant resistivity since the same filler and thermal conductivity are taught. The instant base polymers and particle sizes of said glass microspheres are seen at col. 3, lines 57-65. The use of electrically conductive fillers such as carbon fibers is taught at col. 3, line 22. The instantly recited preamble, "biocompatible", has little probative value and said composite of Plummer et al meets the biocompatible composite since the same polymer and filler are used.

Thus, the invention lacks novelty.

Claims 1-3, 7, 9-13 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Morales et al (US 6,235,801).

Morales et al teach a composite material of a polymer and microspheres and a gel thereof in abstract and examples and at col. 3, lines 28-45. Said gel of examples inherently possesses the instant thermal conductivity and resistivity inherently. Use of other fillers is taught at col. 3, line 63 to col. 4, line 8. Pigments and metal flakes would meet the instant chromopore filler and light reflecting filler, respectively.

Thus, the invention lacks novelty.

Claims 1-3, 5 and 20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kolb et al (US 2002/0128336 A1).

Kolb et al teach a composite material of a polymer and inorganic nanoparticles in abstract, examples and [0005]-[0010]. Ceria and aluminum/silica in [0007] would meet the ceramic. Said composite inherently possesses the instant thermal conductivity since the same polymer and fillers are used.

Thus, the invention lacks novelty.

Claims 1, 20 and 21 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sagal et al (US 2004/0229035 A1).

Sagal et al teach the instant composite having a thermal conductivity greater than  $3 \text{ watt/m} \cdot \text{K}$  and a method of making thereof in [0017]-[0023]. Overlapping thermal conductivity is an anticipation. Ethylene-propylene terpolymer in [0017] would meet the copolymer of ethylene in claim 20 absent further limitation.

Thus, the invention lacks novelty.

Claims 1, 20, 21 and 24-26 are rejected under 35 U.S.C. 103(a) as obvious over Sagal et al (US 2004/0229035 A1) and Takekoshi et al (US 3,833,546).

The instant invention further recites use of an inert gas during mixing of components over Sagal et al. However, such practice is well known in the art as taught by Takekoshi et al, col. 5, lines 66-73.

It would have been obvious to one skilled in the art at the time of invention to utilize an inert gas taught by Takekoshi et al in melt mixing of Sagal et al since it is well known that said inert gas inhibits undesirable said effects such as oxidation or degradation due to presence of oxygen absent showing otherwise.

Claims 1-3 and 13 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Stender et al (US 2004/0102573 A1).

Stender et al teach a composite material of a polymer and microspheres and a gel thereof in abstract, examples and [0023]. Said gel of examples inherently

Art Unit: 1714

possesses the instant thermal conductivity since Stender et al teach reduced thermal conductivity in [0046].

Thus, the invention lacks novelty.

Claims 1, 7, 10-12 and 20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tobita (US 6,652,058).

Tobita teaches the instant composite in table 4 wherein graphite fiber (electrically conducting) and aluminum oxide (light reflecting) are also seen. Said composite would inherently possess the instant resistivity since electrically conducting graphite fibers are used. The instantly recited preamble, "biocompatible", has little probative value and said composite (silicon rubber) Tobita meets the biocompatible composite. Thus, the invention lacks novelty.

Claims 1-4, 20 and 21 are rejected under 35 U.S.C. 103(a) as obvious over Baumgaertner (US 3,847,888) or Salatiello et al (US 3,434,996).

Baumgaertner teaches a polyethylene composition containing up to 40 % by volume of filler such as glass in order to change various properties such as thermal conductivity at col. 8, lines 40-54, and such composition would have the instant thermal conductivity. Molding polyethylene powder would require melting.

Salatiello et al teach the same utilizing PTFE and glass filler (30 % by volume) at col. 11, lines 37-53 wherein an extrusion is also taught. Said extrusion would require melting of PTFE.

Art Unit: 1714

It would have been obvious to one skilled in the art at the time of invention to utilize 30 or 40 % by volume of glass filler in molding polyethylene of Baumgaertner or PTFE of Salatiello et al since Baumgaertner and Salatiello et al teach such modification absent showing otherwise.

Claims 6, 8, 14-19, 22, 23 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H. Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tae H Yoon  
Primary Examiner  
Art Unit 1714

THY/December 11, 2006